

## Abstract of the Disclosure

5 A ruled line extracting apparatus obtains  
circumscribed rectangles of pixel concatenation  
regions included in an input pattern, and calculates  
the most frequent value of their heights.  
Additionally, the apparatus integrates segments by  
ignoring a wild card segment, and calculates the most  
frequent value of height/width of extracted straight  
10 lines and segments structuring the straight line.  
Next, it performs a process for integrating/deleting  
straight lines using each threshold value based on the  
highest frequency value. Then, it checks/deletes a  
straight line according to a distribution of black  
15 pixels around the straight line, and recognizes the  
remaining straight lines as ruled line candidates.